AN EVALUATION OF ARTISANAL FISHERIES RESOURCES IN CROSS RIVER STATE.

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ABSTRACT

Artisanal fisheries resources and its exploitation trends in Cross River State were evaluated using questionnaire and participatory Rapid Appraisal (PRA) methods for a period of 5 years (1991 – 1995). They were open-access or unrestricted access fishing in Cross River State within the period under view. It was also discovered that, they were no proper records from the Department of fisheries. There was a decline in the relative abundance of the stock that constituted the important marine and freshwater fisheries in Cross River State Artisanal fisheries (small scale fisheries) yielded 146,076 metric tons within the period. It was suggested therefore, that government should enforce the policies that restrict open-access in marine artisanal fisheries in Cross River State.

INTRODUCTION

Artisanal fisheries refer to both canoe fishing and in-shore mechanized fishing operating up to1.3m LOA vessels and taking cognizance of the linkage of coastal lagoons and estuaries fisheries. (Aderounmu 1983). The Cross River coastline covered 129km of the total 960km of Nigerian coastline, the main rivers of the state are found from the numerous tributaries arising from the Western slopes of the Cameroun maintain which have two spurs into Nigeria at Oban hills in the South and Obudu hill in the North.

Information on the fisheries resources of the Cross River State is not only scantly but also scattered mostly in various reports of the Cross River State Fisheries Division. Moreso, assessment of available fish stock in the Cross River State has been difficult and the result of any such attempt for Cross River State is not available.

The purpose of the research was to evaluate the artisanal fisheries resources and exploitation trends in Cross River State, the type of species available in Cross River State waters and the different gears used in the exploitation.

Attempt was also made to access the problems encountered by the artisanal fisheries sector during the period and offer possible remedies.

MATERIALS AND METHODS

The data used for the evaluation was collected from the fisheries division of the State Ministry of Agriculture and Natural Resources, Calabar.

Catch and effort statistics of the artisanal fisheries were systematically collected by the fisheries division of Cross River State. The data were collected on daily basis, during the period of landing (i.e. the early hour of the day by the extension staff of the fisheries division. For the easy collection of the data, the fisheries division has it offices in Calabar, Ikot Okpora, Ikang, Ikom and Ogoja respectively. The extension staff did the collection from the beaches within their jurisdiction.

Using the proportional probability sampling method, a projection was made based on personal visit to the areas where data were not available. The mean specific composition of catch

and effort of artisanal marine and freshwater fisheries collected by the fisheries Division of the State between 1991 to 1995 and the projected estimate formed the materials which this research was carried out.

This assessment was limited to that part of the Nigerian coast extending between longitude 7° 30' and 8° 30' E. The climate of the area is typical of tropical rainforest; it comprises dry (November - March) and wet (April - October) seasons.

RESULTS AND DISCUSSION

The available statistics of catch and effort are used to estimate the potential yield of only the artisanal fisheries in the area (Cross River State). In fig. 1 of the regression line AB indicates what is happening to the stocks in the water as more and more canoes and fishermen enter the fishery. The maximum yield of this fishery is shown as 39273MT; while 28, 000MT is shown to be the optimum yield (fig. 2). During the past five years (1991 - 95) the total estimated catch is 140.076MT (Table 6) Estimates based on the GTS (William, Op. cit) indicate that industrial fishing in the area can only yield a maximum of 5,100 tonnes of fish per annum.

The potential yield of the area where data were not available in the fisheries division of the State was estimated at 6,000MT. This estimated figure is based on personal visit to the affected areas. These include Yakurr (Asiga beach), Abi (Ediba beach), Ikom (Okuni beach) and Ogaja This estimated figure was added to the total estimated catch of 140,076MT to have 146.076MT for the period.

Considering the short period for which the statistics had been recorded, the potential yield of 146,076TM should be regarded as a preliminary estimate subject to review when more data are available.

However, taking the two figures together, 146,076MT is the potential yield of the Cross River State artisanal fisheries. It was estimated that this area of the State can accommodate up to 600 vessels

Moses (1980) has given a preliminary estimate of the potential yield of the inland (freshwater) fisheries of the state at 30,000 tonnes per annum. From the above total estimate of 146,076MT, increase beyond this can be achieved by extending the fishing range to other parts of the state and increasing the effectiveness of data collection in all the state beaches by the fisheries division Moses (1980) estimated 254,850 tonnes of the fish potential in the area and this was considered a reasonable estimate because it agreed with Longhurst's estimate of 40 - 53% of standing crop of fish as potential yield in the area.

The decrease in estimate from 254,850 tonnes to 146,076 tonnes might be due to the ineffective management of the artisanal fisheries in the state, probably because of unreliable and insufficient biological data in fish landings from the fisheries division. The sea fisheries decree No. 30 of 1971 (PGN 1971) and the sea fisheries regulation (FGN 1977) arising there from have been attempts by the Federal Government to manage the marine resources. These decreas merely stated the status governing the mesh size of trawl and gill nets, the licensing of trawlers, the dumping of caught fish and the size of the coastal belt allocated to artisanal fisheries, without adequate arrangement to enforce the regulation. Apart from the regulation regarding the mesh size of gill nets, which should apply also to artisanal fisheries, the decrease is essentially for the inshore trawl fisheries.

Unrestricted entry into artisanal fisheries as well as the inability to enforce whatever regulation that had been made to govern the operation of such fisheries has resulted in heavy fishing pressure on stock available to the artisanal fisheries thereby resulting in the decrease. Lack of interest in making and enforcing regulation regarding the operation of artisanal fisheries is a common problem in Cross River State.

Based on Abiagoon (1980) total demand projection of artisanal fisheries for fish in 1985 at 2.82 million MT expected from available resources in Cross River Basin, there can be no doubt

that the fisheries of the Cross River State is at present very much under exploited when compare with the result of this research work which is at 146,076 MT. This is based on the fact that most of the fishermen in the area do not regard fishing as important as crop farming and therefore embark on fishing at subsistence level. Moreseo, the gears used throughout the area are mostly traditional fishing gears, such as cast net, gill net, drag net hook and line, fence trap etc.

With the above situation, it is obvious that domestic demand for fish in Cross River State has never been met by our dependence on the yield from available aquatic resources. The artisanal marine fish species include: Clupeidae, Gobiidae, Sphyraenidae, Mugilidae, Sciaenidae, Trigonidae etc. Also existing in viable commercial quantities are Crusteceans such as crabs, lobsters, Prawns and Shrimps. Cross River State is blessed with numerous lakes and swamps, which have large stocks of fish during the wet season. They are mainly found in Biase, Obubra and Ikom Local Government Areas. Notable fish species found in fresh water of Cross River State are ophiocephalidae, Tetrodontidae, Clariidae, Cyprinidae Centroponidae, Bagridae. Schilbeidae, Clariidae, Cyprinidae etc.

FIG. 1
CATCH ASSESSMENT OF ARTISANAL FISHERIES PRODUCTION IN CROSS RIVER STATE.

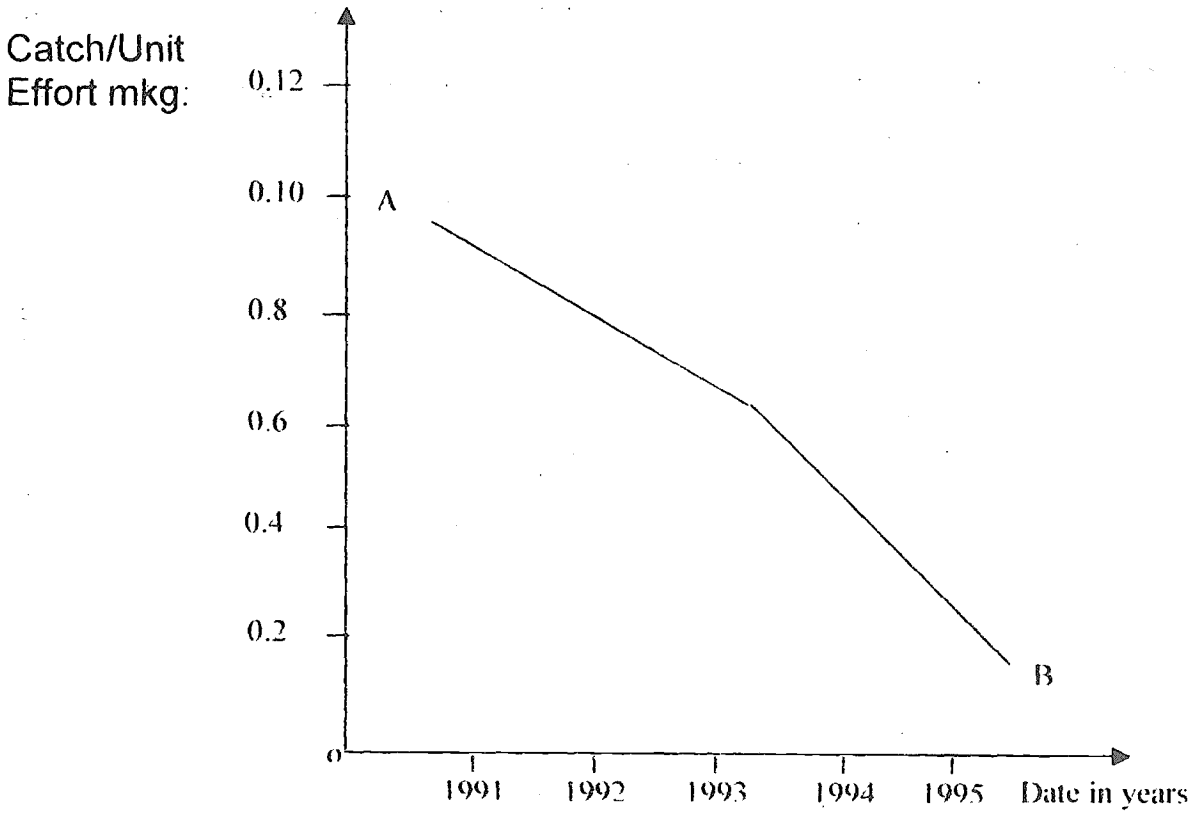


FIG. 2

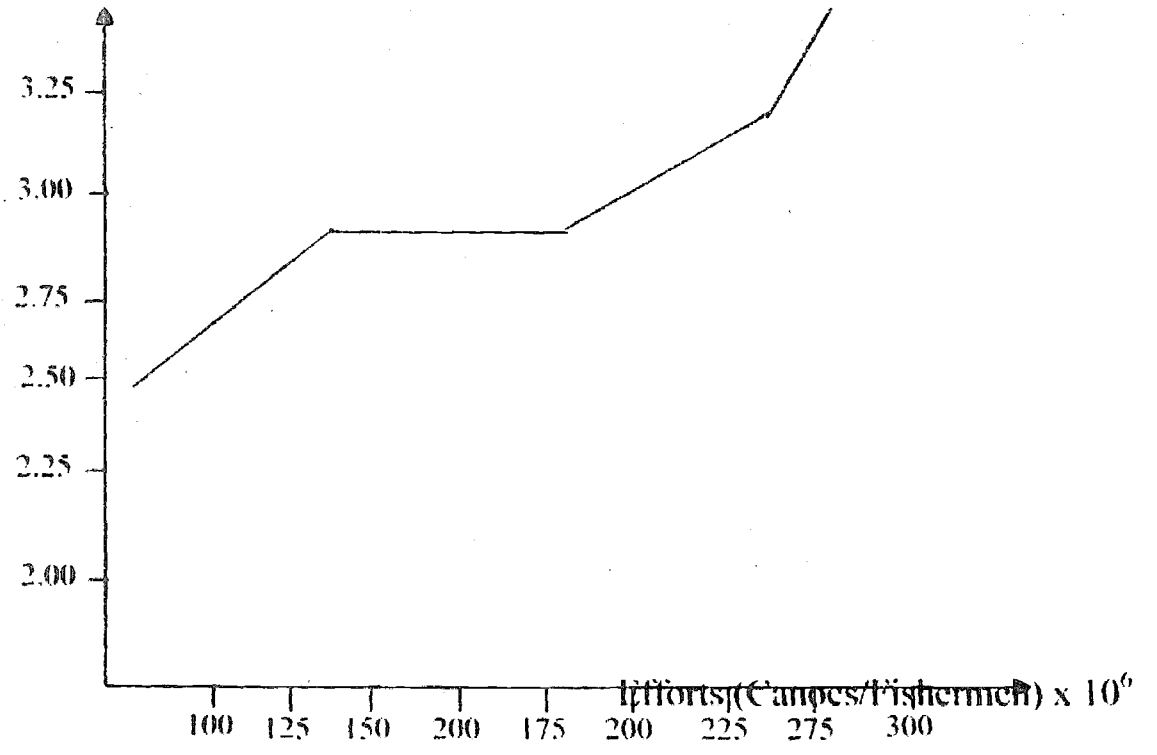


TABLE 1
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1991) (C.R.S) FISHERIES DEPT.

SPECIES	CATCH IN TONNES	%
Sphyraenidae	900	3.0
Mugilidae	983	3.2
Clipeidae	4520	15.0
Carangidae	2097	6.9
Crayfish	5482	18.1
Mormyridae	1809	6.0
Claridae	1330	4.4
Cichlidae	1420	4.7
Cyprinodontidae	700	2.3
Bagridae	988	3.3
Schilbeidae	775	2.6
Cyprinidae	564	1.9
Oprinlocephalidae	234	0.8
Tetrodontidae	155	0.5
Centroponidae	2895	9.6
Solaidae	1004	3.3
Sciaendae	2895	9.6
Other Species	1522	5.0
TOTAL	30273	

TABLE 2
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1992) C.R.S. FISHERIES DEPT.

SPECIES	CATCH	%
Sphyraenidae	706	2.3
Mugilidae	715	2.4
Clipeidae	3421	14.3
Carangidae	2098	6.0
Crayfish	5454	18.0
Mormyridae	1701	5.6
Claridae	1330	4.4
Cichlidae	1222	4.0
Cyprinodontidae	702	2.3
Bagridae	1088	3.6
Schilbeidae	797	2.6
Cyprinidae	598	2.0
Oprinlocephalldae	106	0.4
Tetrodontidae	119	0.4
Centroponidae	2790	9.2
Solaidae	904	3.0
Sciaendae	2790	9.2
Other Species	1122	3.7
TOTAL	28563	

TABLE 3
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1993) C.R.S. FISHERIES DEPT.

SPECIES	CATCH IN TONNES	%

Sphyraenidae	520	1.9
Mugilidae	599	2.1
Cclipeidae	4421	15.8
Carangidae	2098	7.5
Crayfish	5378	19.2
Mormyridae	1701	6.1
Clariidae	1230	4.4
Cichlidae	1230	4.7
Cyprinodontidae	601	2.1
Bagridae	1088	3.9
Schilbeidae	736	2.6
Cyprinidae	498	1.8
Ophiocephalidae	259	0.9
Tetrodontidae	100	0.4
Centroponidae	2691	9.6
Other Species	1322	4.7
Solaidae	804	2.9
Sciaenidae	2691	9.6
TOTAL	28057	

TABLE 4
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1994) (C.R.S/) FISHERIES DEPT.

SPECIES	CATCH IN TONNES	%
Sphyraenidae	846	3 0
Mugilidae	583	2.1
Clipeidae	4121	14.6
Carangidae	2097	7.4
Crayfish	5378	19.0
Mormyridae	1715	6.1
Claridae	1230	4.4
Cichlidae	1320	4.7
Cyprinodontidae	600	2.1
Bagridae	1012	3.6
Schilbeidae	736	2.6
Cyprinidae	597	2.1
Oprinlocephalldae	199	0.7
Tetrodontidae	93	0.3
Centroponidae	2794	9.9
Solaidae	1322	4.7
Sciaendae	803	2.8
Other Species	2794	9.9
TOTAL	28240	

TABLE 5
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1995) (C.R.S) FISHERIES DEPT.

SPECIES	CATCH IN TONNES	%
Sphyraenidae	643	2.4
Mugilidae	615	2.4
Clipeidae	3521	13.9
Carangidae	2098	8.3
Crayfish	5178	20.0
Mormyridae	1609	6.4
Clariidae	975	3.9
Cyprinodontidae	400	1.6
Babgridae	704	3.0
Schilbeidae	536	2.1
Cyprinidaae	333	1.2
Ophiocephalidae	199	0.8
Terodontidae	92	0.4
Centroponidae	2591	10.3
Solaidae	1122	4.4
Sciaenidae	704	2.8
Other Species	2591	10.2
Cicchlidae	1321	5.2
TOTAL	25292	

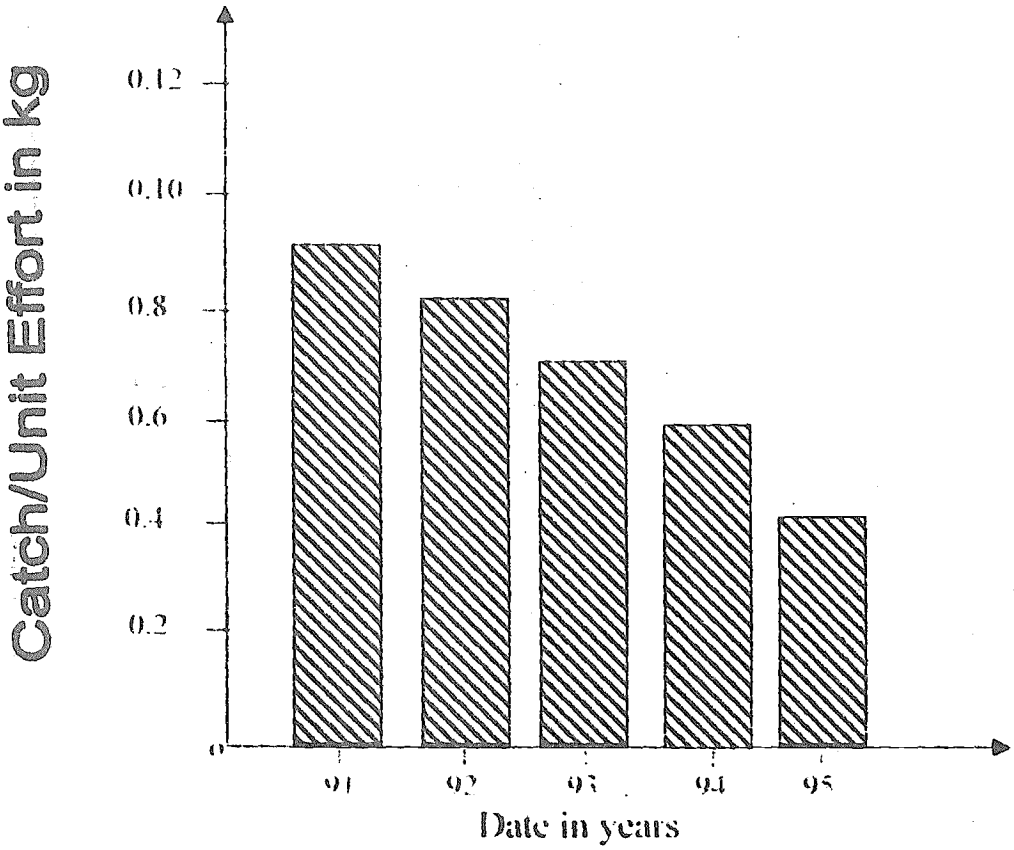
TABLE 6
SPECIES COMPOSITION OF CATCHES FROM ARTISANAL FISHERIES (1991 - 1995)
Yield in tonnes

NO	Species	1991	1992	1993	1994	1995	Total	%
1.	Sphyraenidae	900	706	520	846	643	3,618	2 6
2.	Mugilidae	983	715	599	583	615	3,498	2.5
3.	Carangidae	4520	4321	4421	4121	3521	21,105	15.0
4.	Chipeidae	2097	2098	2098	2097	2098	10,492	7 5
5.	Crayfish	5482	5454	5378	5378	5178	26,893	19.2
6.	Mormyridae	1809	1791	1701	1715	1609	8,442	6.0
7.	Claridae	1330	1330	1230	1230	975	6,151	4.4
8.	Cichlidae	1420	1220	1230	1320	1321	6,603	4.7
9.	Cyprinodontid	700	7002	601	600	400	3,005	2.1
10.	Bagridae	988	1088	1088	1012	764	4,945	3.5
11.	Schilbeidae	775	797	736	736	356	3,583	2.6
12.	Cyprinidae	564	598	498	597	333	2,509	1 8
13.	Ophiocephalid	234	106	259	199	199	1,000	0.7
14.	Tetrodontidae	155	119	100	93	92	587	0.4
15.	Centroponida	2895	2790	2691	2794	2591	13,456	9 6
16.	Other species	1522	1122	1322	1322	1122	6,512	4.6
17.	Solaidae	1004	904	804	803	704	4,221	3.0
18.	Sciaenidae	2895	2790	2691	2794	2591	13,456	9.6
	Total	30273	28563	28057	.28240	25292	140,076	100%

TABLE 7
CATCH EFFORTS STATISTICS OF CROSS RIVER STATE ARTISANAL FISHERIES, 1991 - 1995

Year	Catch in tonnes	No. canoes x 10^3	No. of f'men	Catch/Unit Effort in kg
1991	30273	20.0	130.0	0.09
1992	28562	21.0	118.0	0.08
1993	28057	19.5	108.0	0.07
1994	28240	15.0	96.0	0.05
1995	25292	12.0	78.0	0.03

FIG 3.
BAR-CHART OF THE TREND OF ARTISANAL FISHERIES IN CROSS RIVER STATE 1991 - 1995.



RECOMMENDATIONS

Despite the death of biological and statistical data on the freshwater fish stock, various happenings within the marine river systems make it important that the government of Cross River State should show more interest in the conservation of the resources for optimum sustained yield.

With the problem of the weak data base assessment of the artisan fisheries, it is not easy to make any good plan for development to the government, because, it is easy to over capitalize when the resources is not there or to underplan and leave the resources largely untapped. I therefore suggest that government should increase her manpower.

The decline in the data of stock abundance may be attributed to life in the fishing settlement, which is so hard that fishing is virtually the occupation for illiterate elderly men There

are inherent difficulties in the development of coastal and riverine areas. In spite of this, the only way to render the fishing settlements attractive is for government to plan and develop these settlements along with other rural communities otnerwise the drift of school leavers to urban areas cannot be arrested.

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